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# Certificate of Analysis

## Manganese(II) Chloride tetrahydrate

[13446-34-9] (  $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$  ) FW:197.91

Extra  
Pure Grade  
Lot-G1D521  
**RESULTS**

TESTS	UNIT	SPECIFICATION	RESULTS
Appearance		Is a light pink crystals or crystalline powder.	pass
Identification A		A solution(0.5%) ; Precipitation test	pass
Identification B		Discoloration Reaction Test.	pass
Assay	%	Min. 98.0	99.3
Solubility in water		To pass test	pass
pH (5 w/v %, 25°C)		4.0 ~ 6.0	5.3
Sulfate ( $\text{SO}_4$ )	%	Max. 0.02	<0.02
Zinc (Zn)	%	Max. 0.01	<0.01
Lead (Pb)	%	Max. 0.01	<0.01
Iron (Fe)	%	Max. 0.01	<0.01

Mfg. Date : 2016-01-13

Exp. Date : 5 years after Mfg. Date

Test Method : JIS K 8160

Tested by : Min-Jung, Kim



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**B. K. CHOI, Supervisor**  
Quality control